## [1단계: R Base 설치]

Step 1: https://www.r-project.org/ 접속

#### Step 2: download R 클릭



#### [Home]

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# The R Project for Statistical Computing

#### Getting Started

R is a free software environment for statistical computing and graphics. It compiles and runs on a wide variety of UNIX platforms, Windows and MacOS. To download R please choose your preferred CRAN mirror.

If you have questions about R like how to download and install the software, or what the license terms are, please read our answers to frequently asked questions before you send an email.

#### News

- The R Journal Volume 7/2 is available.
- . R version 3.2.3 (Wooden Christmas-Tree) has been released on 2015-12-10.>
- R version 3.1.3 (Smooth Sidewalk) has been released on 2015-03-09.
- useR! 2015, took place at the University of Aalborg, Denmark, June 30 July 3, 2015.

### Step 3: CRAN Mirrors 중 Korea 선택 (아래 세 가지 중 하나)

Korea http://cran.nexr.com/ http://healthstat.snu.ac.kr/CRAN/ http://cran.biodisk.org/

NexR Corporation, Seoul
Graduate School of Public Health, Seoul National University, Seoul
The Genome Institute of UNIST (Ulsan National Institute of Science and Technology)

#### Step 4: Download R for Windows 클릭

The Comprehensive R Archive Network

Download and Install R

Precompiled binary distributions of the base system and contributed packages, Windows and Mac users most likely want one of these versions of R:

- Download R for Linux
- Download R for (Mac) OS 2
   Download R for Windows

R is part of many Linux distributions, you should check with your Linux package management system in addition to the link above.

#### Step 5: install R for the first time 클릭

R for Windows

Subdirectories:

Binaries for base distribution (managed by Duncan Murdoch). This is what you want to install R for the first time. <u>base</u>

Binaries of contributed packages (managed by Uwe Ligges). There is also information on third party software available for CRAN Windows services contrib

and corresponding environment and make variables.

Tools to build R and R packages (managed by Duncan Murdoch). This is what you want to build your own packages on Windows, or to build R Rtools

Please do not submit binaries to CRAN. Package developers might want to contact Duncan Murdoch or Uwe Ligges directly in case of questions / suggestions related to Windows binaries.

You may also want to read the R FAQ and R for Windows FAQ.

Note: CRAN does some checks on these binaries for viruses, but cannot give guarantees. Use the normal precautions with downloaded executables.

#### Step 6: Download R 3.2.3 for Windows 클릭

R-3.2.3 for Windows (32/64 bit)

Download R 3.2.3 for Windows (62 megabytes, 32/64 bit)

Installation and other instructions New features in this version

If you want to double-check that the package you have downloaded exactly matches the package distributed by R, you can compare the md5sum of the .exe to the true fingerprint. You will need a version of md5sum for windows: both graphical and command line versions are available.

Frequently asked questions

- How do I install R when using Windows Vista?
- How do I update packages in my previous version of R?
- Should I run 32-bit or 64-bit R?

Please see the R FAQ for general information about R and the R Windows FAQ for Windows-specific information.

- Patches to this release are incorporated in the <u>r-patched snapshot build</u>.
- · A build of the development version (which will eventually become the next major release of R) is available in the r-devel snapshot build.
- Previous releases

Note to webmasters: A stable link which will redirect to the current Windows binary release is <CRAN MIRROR>/bin/windows/base/release.htm.

### Step 7: R-3.2.3-win.exe 파일 실행하여 R base 설치

# [2단계: RStudio 설치]

Step 1: https://www.rstudio.com/ 접속

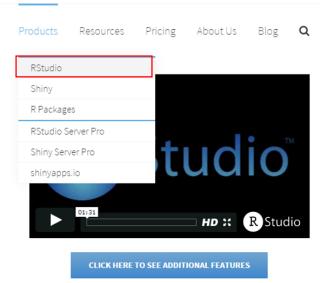
### Step 2: Product → R Studio 선택



# Take control of your R code

RStudio is an integrated development environment (IDE) for R. It includes a console, syntax-highlighting editor that supports direct code execution, as well as tools for plotting, history, debugging and workspace management. Click here to see more RStudio features.

RStudio is available in open source and commercial editions and runs on the desktop (Windows, Mac, and Linux) or in a browser connected to RStudio Server or RStudio Server Pro (Debian/Ubuntu, RedHat/CentOS, and SUSE Linux).



# Step 3: RStudio Desktop 다운로드

## RStudio Desktop

	Open Source Edition	Commercial License	
Overview	<ul> <li>Access RStudio locally</li> <li>Syntax highlighting, code completion, and smart indentation</li> <li>Execute R code directly from the source editor</li> <li>Quickly jump to function definitions</li> <li>Easily manage multiple working directories using projects</li> <li>Integrated R help and documentation</li> <li>Interactive debugger to diagnose and fix errors quickly</li> <li>Extensive package development tools</li> </ul>	All of the features of open source; plus:  A commercial license for organizations not able to use AGPL software  Access to priority support	
Support	Community forums only	<ul><li>Priority Email Support</li><li>8 hour response during business hours (ET)</li></ul>	
License	AGPL v3	RStudio License Agreement	
Pricing	Free	\$995/year	
	DOWNLOAD RSTUDIO DESKTOP	BUY NOW	

## Step 4: 운영체제에 맞는 RStudio 설치 (Windows일 경우 아래 붉은색 네모박스 파일 선택)

## **RStudio Desktop 0.99.491** — Release Notes

RStudio requires R 2.11.1 (or higher). If you don't already have R, you can download it here.



#### **Installers for Supported Platforms**

Installers	Size	Date	MD5
RStudio 0.99.491 - Windows Vista/7/8/10	73.9 MB	2015-12-30	b0448ecdeeeaded07cc3c3810bba1df2
RStudio 0.99.491 - Mac OS X 10.6+ (64-bit)	56.2 MB	2015-12-30	e9d20e f34898dcdb534e239158653c6e
RStudio 0.99.491 - Ubuntu 12.04+/Debian 8+ (32-bit)	77.4 MB	2015-12-30	4e 188202a8ee 5da530dc 1b 448653e6a0
RStudio 0.99.491 - Ubuntu 12.04+/Debian 8+ (64-bit)	83.9 MB	2015-12-30	32b9484c53d840e22903b3f19c3cbf1e
RStudio 0.99.491 - Fedora 19+/RedHat 7+/openSUSE 13.1+ (32-bit)	76.8 MB	2015-12-30	3f ef 946ebedb 0b 0542be1a.81 80228454
RStudio 0.99.491 - Fedora 19+/RedHat 7+/openSUSE 13.1+ (64-bit)	77.7 MB	2015-12-30	Oc 02d3ec5d69e43eaDe32a3d8de443f4
Zip/Tarballs			
<b>Zip/Tarballs</b> Zip/tar archives	Size	Date	MD5
	Size 105.5 MB	Date 2015-12-30	MD5 1fd7bf8a8d60ecf488f8a612d7dbcf47
Zip/tar archives			
Zip/tar archives RStudio 0.99.491 - Windows Vista/7/8/10	105.5 MB	2015-12-30	1fd7bf8a8d60ecf488f8a612d7dbcf47
Zip/tar archives RStudio 0.99.491 - Windows Vista/7/8/10 RStudio 0.99.491 - Ubuntu 12.04+/Debian 8+ (32-bit)	105.5 MB 78.1 MB	2015-12-30	1fd7bf8a8d60ecf488f8a612d7dbcf47 eb4ab2a57184be954888b9ab1fba917f

#### **Source Code**

A tarball containing source code for RStudio v0.99.491 can be downloaded from here

### Step 5: 다운로드된 RStudio-0.99.491.exe 파일 실행하여 설치 완료

## [3단계: 필요 R Package 설치]

#### Step 1: R Packages install.R 파일 실행

```
1 # Press ctrl + Enter for each row to install the package
 2
 3 install.packages("RODBC")
 4 install.packages("ggplot2")
 5 install.packages("MASS")
 6 install.packages("BSDA")
 7 install.packages("knitr")
 8 install.packages("devtools")
 9 install.packages("HistData")
10 install.packages("leaps")
11 install.packages("tree")
12 install.packages("qcc")
13 install.packages("MSQC")
14
15 library(devtools)
16 install github("ggbiplot", "vqv")
Step 2: 실습에 필요한 패키지 설치 및 확인
설치 방법: 각 line에서 ctrl + Enter를 입력하여 개별 패키지를 설치
```

확인 방법: 아래와 같이 package 'Package name" successfully unpacked and MD5 sums checked 라는 메시지가 뜨면 제대로 설치가 완료된 것임 (중간의 붉은색 메시지는 에러 메시지 아님)

#### Step 3: knitr 패키지 작동 확인

확인 방법: 2일차 ggplot2\_examples.Rmd 파일을 열어 아래 표시된 "Knit HTML" 버튼을 클릭하여 html 파일이 생성되는 것을 확인

```
● ggplot2_examples.Rmd *

1 ---
2 title: "ggplot2_examples"
3 author: "Pilsung Kang"
4 date: "2016년 1월 14일"
5 output: html_document
6 ---
7
8 R 마크다운을 이용하여 R 스크립트와 결과물을 HTML 파일로 불러오는 예제.
```

#### <HTML 결과물>

